



**NTSB** National Transportation Safety Board

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*Office of Aviation Safety*

**Air Tahoma Flight 185**  
**Convair 580**  
**August 13, 2004**  
**Covington, Kentucky**







# Non-Contributing Factors

- No preexisting failures
- No evidence of fatigue
- Sufficient fuel on board

# Accident Summary

- Captain was distracted
  - Weight and balance during flight
- Crossfeed operations
  - Proper procedures not followed
  - Fuel transferred between tanks
- Flight crew missed opportunities
- Dual engine flameout



# Main Investigative Areas

- Captain's weight and balance calculations
- Fuel crossfeed operation
- Monitoring fuel quantity
- Dual engine flameout

# Weight and Balance

- No load manifest left at Memphis
- Weight and balance computer inoperative
- Paperwork – outside limits
- Used “general experience”



**AIR TAHOMA, INC. WEIGHT AND BALANCE CONTROL FORM AT 106-580C (CARGO ONLY)**

COMPARTMENT LOADING	ARM	WEIGHT	MOM/1000	WEIGHT	MOM/1000	DATE: <u>08/13/04</u>	FLIGHT: <u>185</u>
ACM/Observer Yes <input checked="" type="radio"/> No <input type="radio"/>	116.0	—	—			STATION FROM: <u>MEM</u> TO: <u>CVG</u>	AC NO: <u>N586P</u> AC FLIGHT LOG NO: <u>71284</u>
A CMPT (4,900)	232.0	1980	460		460	PREPARED BY: <u>B. Picchelli</u>	
LWR CMPT (1,000)	250.0	—	—			CAPTAIN SIGNATURE:	
B CMPT (4,900)	341.0	2720	328	2940	1003	COMP DEPT +05	ANTI-ICE ON <input checked="" type="checkbox"/> OFF <input type="checkbox"/>
C CMPT (4,900)	450.0	2940	1323	2720	1224	DEPT TEMP A	ASSUMED TEMP +20° <input checked="" type="checkbox"/> F
D CMPT (4,900)	559.0	3160	1767		1767	DEPT WIND 010/06	COMP DEST +05
E CMPT (4,900)	679.0	1600	1086		1086	DEPT RNWY 36	DEST TEMP 16
AFT. CMPT (1,800)	765.0	—	—			DEPT ° FLAPS 15	DEST RNWY 36
TOTAL LOAD		12400	5564		5540	DEPT ° FLAPS 28	DEST ° FLAPS
BOW		34413	12535		12535	CHART ATOG DEPT 921 581	CHART ATOG DEST 520
ZFW		46813	18159		18135	ADJUSTMENTS —	ADJUSTMENTS —
FUEL LOAD	397.0	2800	3136	7600	3017	MAX TAKEOFF LIMIT 546	MAX LANDING LIMIT 520
RAMP WEIGHT		54623	21295	54313	21052	EN ROUTE LIMIT 546	FUEL DUMP MINUTES (1200 #/MINUTES)
TAXI BURN	397.0	200	79			REMARKS: 931-570 931-563	
TAKEOFF WEIGHT		54213	21097		21073	CENTER OF GRAVITY LIMITS	
FUEL BURN	397.0	4200	1667			FWD TAKEOFF 19638	AFT TAKEOFF 20386
LANDING WEIGHT		50013	20030			FWD LANDING 18752	AFT LANDING 19529

19430

Revision One

White - Carried during flight

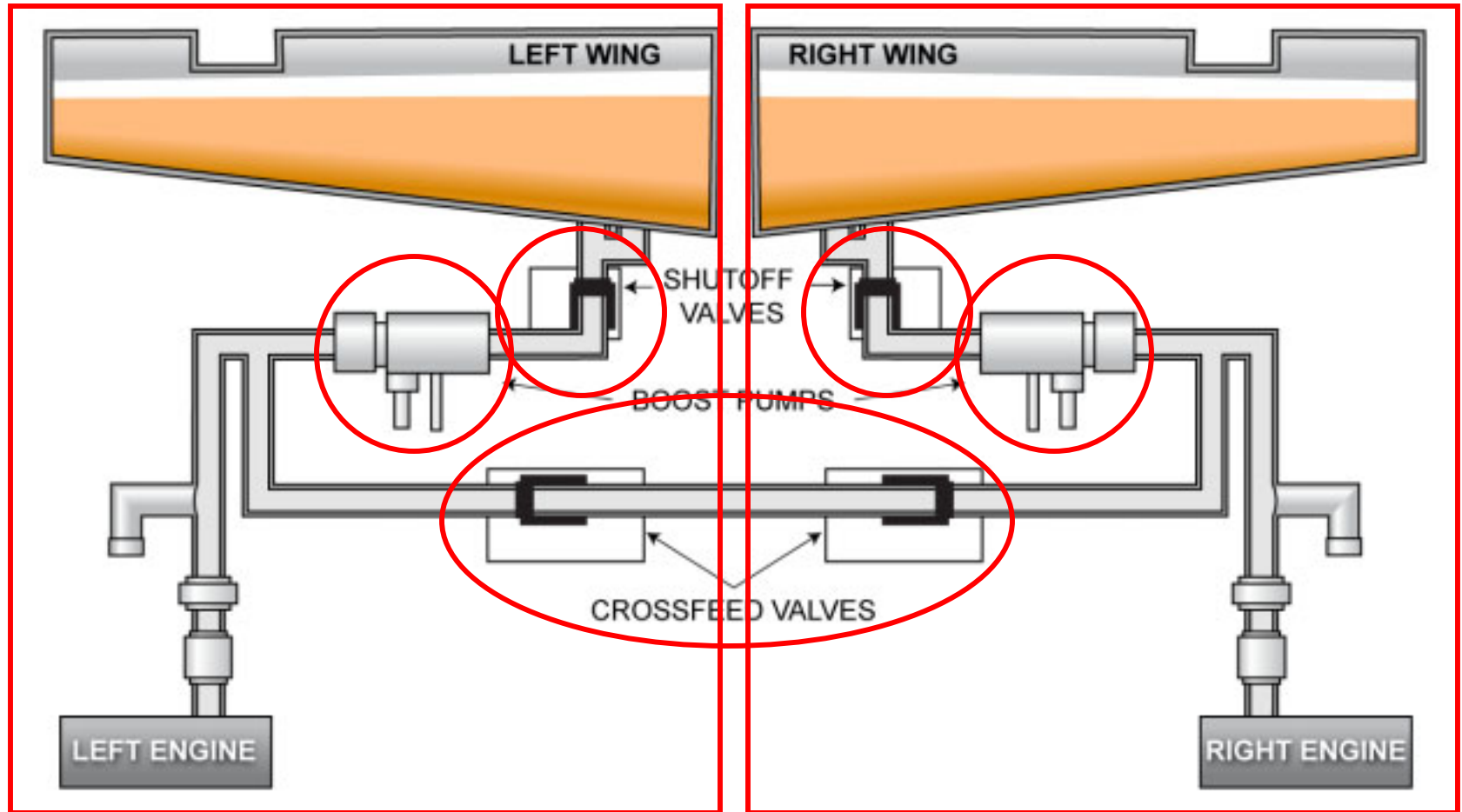
Yellow - Company representative or mailed

# Distraction

- Captain completing paperwork in flight
- 50 minutes after takeoff
  - started crossfeed operations
- Captain did not follow procedures



# FUEL TANK DIAGRAM



# Convair 580 Limitations

- Fuel transfer prohibited
- AFM & cockpit placard

Fuel transfer from tank to tank is prohibited. When operating with the crossfeed system, turn off fuel valve for tank not being used.

- No history of valve failures



# Missed Opportunities

- Airplane handling characteristics
- Over the last 9 minutes
- First officer
  - “yoke feels funny”
  - “feels like I need a lot of force”
  - “what in the world is going on with this plane”

# Missed Opportunities

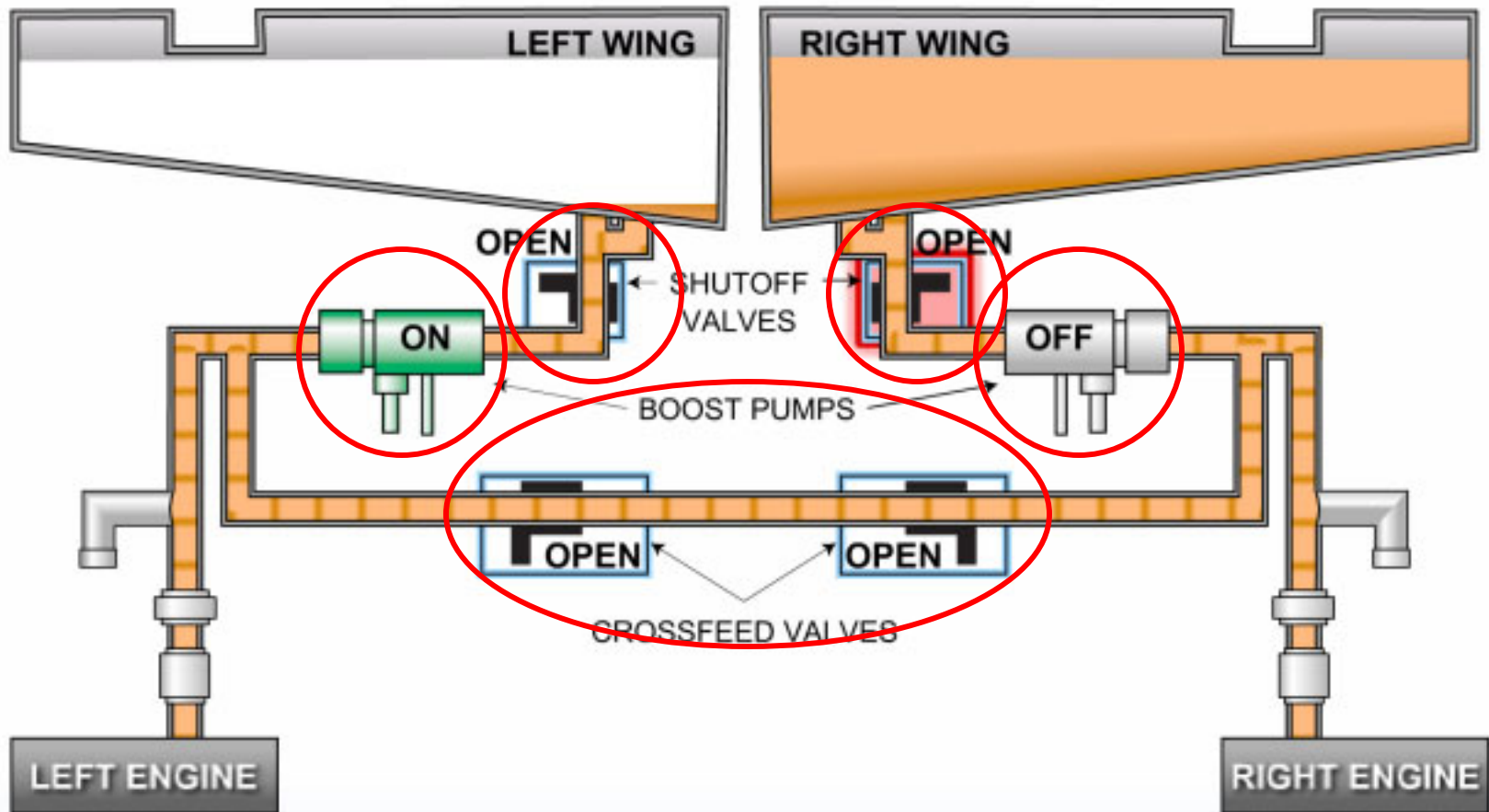
- Captain did not
  - Check fuel quantity
  - Initiate troubleshooting
  - Assess the handling qualities
- Captain
  - “we’ll do a full control check on the ground”



# Missed Opportunities

- Captain
  - Started in-range checklist at 3,200 feet
  - Found open crossfeed
  - 30 seconds before dual engine flameout
- Air Tahoma Procedures
  - Start in-range checklist at 12,000 feet

# ACCIDENT CROSSFEED OPERATION





# Significant Findings

- Captain was distracted during flight
- Improper fuel crossfeed
- Flight crew missed opportunities
- Different fuel pump pressures

# NTSB Staff

- Tom Jacky
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# Parties and Accredited Rep

## PARTIES

- Federal Aviation Administration
- Air Tahoma
- Rolls-Royce

## ACCREDITED REPRESENTATIVE

- Transportation Safety Board of Canada
  - Kelowna Flightcraft Ltd.

# Office of Aviation Safety Workload

- 8 major investigations
- 5 major reports
- 385 regional investigation launches
- 21 foreign investigation launches
- 88 safety recommendations





**NTSB**